

REMARKS

SPECIAL STATUS

The present application has been pending well over five years, and is therefore entitled to special status pursuant to MPEP 708.01(I). Applicant requests prompt action on this application, as close to 40% of available patent term has already been used up.

CLAIM AMENDMENTS

Applicant amends claim 1 to recite the additional limitation that the message list “includes messages having different intended recipients.”

As discussed on page 9, lines 5-8, a message has a destination mask in which each bit corresponds to a different intended recipient. Thus, the intended recipient can be one processor, all processors, or different combinations of processors depending on which of the bits are set.

SECTION 103 REJECTION OF CLAIM 1

Claim 1 stands rejected as being allegedly rendered obvious by the combination of *Chou*¹ and *Kingsbury*².

Kingsbury

Kingsbury describes communication between “processes” and not between “processors.” As is well known in the art, a “process” and a “processor” are different things. To demonstrate this, one has only to open Windows “Task Manager”, click on the “Processes” tab. There, one will see listed dozens of processes executing on a machine with perhaps only a single processor. In the discussion that follows, Applicant ignores the distinction. However, this is not to be construed as an admission that no such distinction exists.

¹ *Chou* et al., U.S. Patent No. 5,905,897.

² *Kingsbury*, et al., US 2003/0061395.

According to FIG. 2 of *Kingsbury*, a particular node **12** from FIG. 1 may have more than one processor. However, this does not change the fact that throughout the description, it is “processes” that *Kingsbury* describes as communicating with each other, not processors.

Kingsbury discloses a “mailbox data structure” in which each mailbox “serves as a receiving area for messages being sent to a specific recipient process.”³ Applicant assumes, for the sake of argument and without admitting that this is the case, that a particular mailbox holds a list of messages, all of which are intended for one “specific recipient process.”

According to *Kingsbury*, to send a message to a particular process, one adds that message to a message list maintained in that process’ mailbox. Therefore, all messages in a particular message list associated with a mailbox would have the same intended recipient: the process assigned to that mailbox.

By way of analogy, a person may rent a mailbox at the post office. To deliver a letter, one would read the intended recipient of the letter, and then place it in that person’s mailbox. As a result, every letter in that mailbox would have the same intended recipient: the person renting the mailbox.

Kingsbury does not disclose anything like Applicant’s system, in which a single message list contains messages for all processors. In *Kingsbury*, to send a message to a set of processes, one must access the mailbox for each such process and enter a message in a message list associated with that mailbox.

To the extent the mailbox associated with one of *Kingsbury*’s processes is regarded as containing a message list, that message list can only include messages intended for that process. Messages for other processes would be placed in message slots

³ *Kingsbury*, paragraph 20.

corresponding to those processes. Consequently, *Kingsbury* fails to teach or suggest a message list that includes messages having different intended recipients.

Chou

Chou describes a system that receives interrupt requests from various peripheral devices. Examples of such devices include a keyboard, a mouse, or a disk. These interrupt requests do not specify any intended recipients.

Chou's system prioritizes these incoming interrupt requests and supply one or more intended recipients. These intended recipients are selected from processors **CPU0-CPU3**.

Hybrid Method Suggested by Combining *Chou* and *Kingsbury*

If one of ordinary skill in the art were to combine the teaching of *Chou* and *Kingsbury*, the resulting hybrid method would operate as follows:

1. The hybrid method would receive an interrupt request, for example, from a keyboard. Consistent with *Chou*, the interrupt request would have no particular intended recipient.
2. As suggested by *Chou*, a suitable intended recipient from **CPU0-CPU3** would be identified. Note that these recipients would be CPUs, not "processes" as required by the claim. However, we ignore this deficiency for the time being.
3. Having identified the intended recipient CPU for the incoming interrupt request, the hybrid method would follow *Kingsbury*'s disclosure by placing this interrupt request into a message-list associated with a mailbox especially designated for that CPU.
4. Eventually, the CPU would receive this interrupt request.

Differences Between Hybrid Method and Claim 1

Let us now consider the differences between the hybrid method, formed by combining the teachings of the reference, and the method recited in claim 1.

Difference 1: Message-List Does Not Have Different Intended Recipients

According to claim 1, the message-list includes messages having different intended recipients.

In the hybrid method, the mailbox for **CPU0** would have messages designated for **CPU0** only. One of ordinary skill in the art would have regarded it as pointless to place messages for **CPU1** in the mailbox for **CPU0**, because **CPU1** would have had no apparent way to receive those messages.

Therefore, even if one were to combine the teachings of the references, the resulting method would still not have a single message list that includes messages intended for different recipients.

Difference 2: Message list not accessible to a plurality of processors

According to claim 1, the new-message slot is selected from a message list accessible to a plurality of processors.

In the hybrid method, the message list would correspond to some selection of registers from FIG. 4. However, these registers are not accessible to any of **CPU0-CPU3**. According to FIGS. 3 and 5, each CPU connects to a line **int_cpuX** that leads to a circuit **40**. However, according to FIG. 5, the registers in question are not part of this circuit **40**.

Additionally, one of ordinary skill in the art would have noted the outbound arrows from circuit **40** to the CPUs. These would have suggested to one of ordinary skill in the art that the CPUs did not access anything in circuit **40**, but instead merely received messages from circuit **40**.

It is apparent therefore that even if one were to combine the references as proposed, the result would still fail to include a method in which a new-message slot is selected from a message list that is accessible to a plurality of processors.

Difference 3: Message lacks an intended recipient

Further, according to claim 1, the received message that is to be posted on the message list is expected to have an intended recipient.

As articulated above, the first step in the hybrid method formed by combining *Chou* and *Kingsbury* is that of receiving an interrupt request from a keyboard, mouse or disk. This interrupt request indicates that the peripheral in question has reached a particular state in which it requires attention. But according to *Chou*, the interrupt request does not specify who is to provide the attention.⁴ That function, says *Chou*, belongs to the interrupt controller 30.⁵

Thus, even if one of ordinary skill in the art were to combine the cited art, the result would not be a method that includes receiving a message having an intended recipient.

Motivation to combine is flawed

The Office suggests that one of ordinary skill in the art would have found it obvious

“to implement or incorporate *Kingsbury* message list in *Chou*’s method enabling nodes to pass messages to each other.”

⁴ *Chou*, col. 4, lines 33-36 (“interrupt request” includes “any physical signal asserted by an external device indicating that the device has reached a particular state and requires processing”).

⁵ *Chou*, col. 4, lines 38-39 (interrupt controller “routes the requests to an appropriate destination CPU or CPUs.”)

According to KSR, “rejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness”⁶

The proposed motivation to combine is a mere conclusory statement saying in effect that *Kingsbury*’s message list should somehow be combined with *Chou*’s method, which involves enabling nodes to pass messages to each other. The Office does not advance any reason for why one of ordinary skill in the art would have considered doing so.

Chou discloses directing an interrupt request to an appropriate one of several processors. These interrupt requests come from peripheral devices, like a keyboard, mouse, or disk drive.

Kingsbury is directed to allowing a process to communicate with another process by providing a mailbox for each process.

There is no plausible basis for what one of ordinary skill in the art might be trying to do by combining such dissimilar teachings. Nor has the Examiner provided any plausible basis, beyond the conclusory assertion that it is somehow obvious to do so.

Applicant recognizes that common sense of those having ordinary skill in the art is a basis for combining references. However, there is no common sense that would suggest combining a method for processing of interrupt requests from such devices as a mouse or keyboard with the processing of messages between processes.

The proposed motivation to combine the references is thus insufficient to support a prima facie case of obviousness.

⁶ *KSR Intern. Co. v. Teleflex Inc.*, 127 S.Ct. 1727, 1741 (2007).

SECTION 103 REJECTION OF CLAIM 2-4

Claim 2 recites the additional limitation of “inserting said new-message slot into said message list, said message list including a first existing-message slot having a pointer to a second existing-message slot”.

The Office suggests that the foregoing limitation is disclosed at *Kingsbury* paragraphs 13-14 and 34.

The Response filed in October 24, 2005 addresses the Examiner’s earlier assertion that paragraph 34 of *Kingsbury* discloses the subject matter of claim 2. Accordingly, Applicant refers the Examiner to that paper.

Applicant notes that following the above response in October 2005, the citation of *Kingsbury* against claim 2 was withdrawn.

With regard to claims 13-14, the Examiner refers to certain “availability indicators” that indicate whether a slot is available. However, an availability indicator is not a pointer from one message slot to another.

The Examiner does not identify with specificity where the additional limitations of claims 3 and 4 can be found. Instead, the Examiner appears to have merely cut and paste text from the discussion of claim 2. Accordingly, the Office Action is incomplete.

In addition, claims 3 and 4 depend on claim 2 and patentable for at least the same reasons.

SECTION 103 REJECTION OF CLAIMS 5-6

Claims 5 and 6 both include the limitation “modifying a destination mask associated with said new-message slot, said destination mask including information specifying all intended recipients of said message.”

In rejecting these claims, the Examiner appears to have simply cut and paste text used in rejecting claims 2-4 concerning paragraphs 13-14 and 34.

The Examiner has drawn specific attention to the “availability indicators” referred to in paragraphs 13-14. However, those indicators do not amount to destination masks that include information specifying intended recipients of a particular message. Instead,

they specify whether a message slot is available. This has nothing to do with specifying an intended recipient of a message.

The Examiner has not identified any text in paragraph 34 that discloses the claimed destination mask. Nor is it apparent where any such teaching is disclosed.

SECTION 103 REJECTION OF CLAIM 7

Claim 7 recites the additional limitation of “updating a message directory to indicate the presence of said new-message slot in said message list.”

The Examiner cites *Kingsbury* paragraphs 34-35 as disclosing the foregoing limitation.

Applicant speculates that the Examiner regards the n_present field in FIG. 5 as corresponding to the claimed “message directory.”

In *Kingsbury*, the mailbox data structure has some pre-defined number of slots. These slots fill up with messages. If a message has not been read, the slot that it resides in cannot be used for a new message. *Kingsbury* uses fields n_reserved and n_present to determine whether any slots are available for new messages.

In contrast, Applicant’s message list has no pre-defined number of slots. Instead, the total number of slots fluctuates as messages are added and deleted. The claimed message directory maintains information concerning the circulation of slots into and out of the message list.

In *Kingsbury*, the n_present field specifies the number of messages that have been received but not yet read. This information says nothing about whether or not there is a new-message slot in a message list. It only indicates the number of unread messages. The number of slots in the mailbox data structure does not change. Therefore, there is no point in updating any field to indicate the presence of a new-message slot, since that field could never be updated.

SECTION 103 REJECTION OF CLAIM 8-9

Claims 8-9 include the limitation of “updating an attention mask containing information indicative of which processors from said plurality of processors are intended recipients of messages contained in said message list.”

To the extent the n_present field is regarded as a message directory, there is no basis for regarding it as including any attention mask. The n_present field is a single value that cannot possibly function as a mask.

In rejecting claims 8-9, the Examiner has cut and paste text used in rejecting claims 2-6. However, the Examiner has not indicated where in that text one can find a reference to anything remotely like an attention mask.

COMPLIANCE WITH RULE 1.104(c)(2) AND 35 USC 132

Applicant draws attention to Rule 1.104(c)(2) which requires that “[w]hen a reference is complex ... the particular part relied on must be designated as nearly as practicable” and that “[t]he pertinence of each reference, if not apparent, must be clearly explained and each rejected claim specified.”

In addition, according to 35 USC 132, “[w]henever, on examination, any claim for a patent is rejected, or any objection or requirement made, the Director shall notify the applicant thereof, stating the reasons for such rejection, or objection or requirement, together with such information and references as may be useful in judging of the propriety of continuing the prosecution of his application;

The rejections of claims 2-4, 5-6, and 8-9 fail to comply with either Rule 1.104(c)(2) or 35 USC 132. Those rejections amount essentially to a recitation of the relevant claim limitation, followed by text that appears to have been cut and paste across all those claims. There appears to have been no effort made to clearly explain where in the reference the particular limitations of those claims can be found.

Applicant requests that the Examiner quote verbatim the particular portions of *Kingsbury* that are believed to disclose each of the limitations of those claims. Alternatively, Applicant requests that the rejections be withdrawn.


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Respectfully submitted,

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